WORK INSTRUCTIONS
1998 TEXAS COMPLIANCE

This document gives an outline of the processes to be used by the Product Testing Laboratory in 1998 for the processing and testing of samples to comply with Texas regulations.

Procurement of Samples

1. Representatives from PTL will personally oversee the purchase and shipment of 166 brands of PM product to the Philip Morris USA Product Testing Laboratory.
   - 49 brands were purchased in the state of Massachusetts and the remaining 117 brands will be purchased from DSC (Dry Storage Corporation) factory warehouse.
   - 4 cartons of each of the 117 brands will be purchased.

PTL Sample Receiving

- Upon receipt of the product shipment, PTL will verify (by initial or signature) the identity and quantity of the brands received. The initialed/signed document along with the Bill of Laden for the shipment will be retained by PTL.
- After verification of the sample shipment PTL will:

1. Retain 15 unopened packs of each brand in cold storage and submit 25 packs for sample analyses (for brands containing 25cigts./pack - retain 12 packs and submit 20).
2. Receive eight (8) brands per the first thirteen requests and three (3) brands on the fourteenth request as follows:
   - Begin each request with the prefix TX.
   - Follow with the 2 digit year.
   - Follow with a dash and sequence number, (example: TX98-1, TX98-2,...).

   (**Note**: There will also be a fifteenth request containing the ten (10) brands contracted out to Lab Tech, Inc.):
3. The tests, replicates, and number of cigarettes per replicate are listed below:

Test	Number of Repl. Per Test	Number of Cigarettes per Replicate
TIP-LENGTH	20*	1
FTC-BUTT	1**	1
TX-TAR	34	3
TX-TPM	34	3
TX-PUFF	34	3
TX-NIC	34	3
TX-H2O	34	3
TX-PH	2	1
TX-EVENT	100	1
E-CTBWT	2	50
E-CWT	2	50
E-P+PWT	2	50
TX-NIC-FLR	2	Filler from 100 cigts.
TX-COV-AG	2	Filler from 100 cigts.

PM3000502987

Source: https://www.industrydocuments.ucsf.edu/docs/zqbl0001

* Manually documented after all packs are opened.
** Calculated as TIP-LENGTH + 3

Note : ***Request TX98-15 will contain the ten brands contracted out to Lab Tech, Inc. Loose cigarettes will be delivered to Lab Tech, Inc. and they will perform the following analyses: TPM, nicotine (in smoke), water, tar, and puff count. PTL will perform the butt length determinations and supply this information to Lab Tech, Inc. (PTL will also perform ventilation, tobacco weight, and pH analysis and AMA will perform the nicotine in filler and ov after grinding analyses for these ten brands.) No CO analysis will be performed on any of the 117 brands.***

4. Deliver samples, request form, and barcode cards to the sample prep lab.

Sample Preparation

1. Carefully open each of the cigarette packs since **all packs need to be retained.** Make sure the pack label stays with each cigarette pack.
2. Prepare four (4) equilibration trays by affixing a barcode label to each tray. Write the appropriate test designation on each label: Smoke, Vent, pH, or Nic-Flr.
3. Sort cigarettes into equilibration trays as follows:

For Sampling from 25 Packs with 20 Cigarettes per Pack

Tray Designation	# of Cigts. From Each Pack	Equilibration Conditions	Total # of Cigts. In Tray
Smoke	5	ISO	125
Vent	4	ISO	100
pH	1	ISO	25
Nic-Flr	4	ISO	100

Note: Six (6) cigarettes should be left in each pack.

For Sampling from 20 Packs with 25 Cigarettes per Pack

Tray Designation	# of Cigts. From Each Pack	Equilibration Conditions	Total # of Cigts. In Tray
Smoke	6	ISO	120
Vent	5	ISO	100
pH	1	ISO	20
Nic-Flr	5	ISO	100

Note: Ten (8) cigarettes should be left in each pack.

4. Leave all remaining cigarettes in the specific pack and return the pack to the appropriate carton.
5. Store the retain cartons in Customer Relations Area.

PM3000502988

Source: https://www.industrydocuments.ucsf.edu/docs/zqbl0001

6. Utilize the cigarettes in the "smoke" equilibration tray to determine the tipping paper length of twenty cigarettes to 0.1 mm and record on the back of the barcode card. The barcode card should also be initialed and dated by the person making the measurements.
7. Customer Relations manually enters the tipping paper lengths into the CQS database. (Retain barcode with tipping paper measurements. - Deliver to C. Callicutt).
8. Using the average of the twenty tipping paper length results, round to the nearest 0.5 mm. Determine the butt length as the average tipping paper length plus 3 millimeters. The butt length result is entered into the CQS database by Customer Relations.
9. Mark the insertion and butt length on all cigarettes in the "Smoke" and "pH" equilibration trays.
10. Apply Scotch Tape #600 horizontally to half the tipping paper on all cigarettes in the "Smoke" equilibration tray and to 5 cigarettes in the "pH" equilibration tray. No tape is applied to the cigarettes in the "Vent" and "Nic-Flr" equilibration trays.
11. Scan and place the four (4) equilibration trays for each sample in the ISO equilibration chamber.

Ventilation Analysis

1. After the samples have equilibrated in the ISO chamber for at least 48 hours, transfer cigarettes from the "Vent" equilibration tray to a labeled and sealed plastic container and deliver to the PT Lab.
2. Analyze all one hundred (100) cigarettes for ventilation on the **FIDUS PDI/DDI** Instrument Only. (If additional cigarette(s) are needed, obtain from the "pH" equilibration tray making sure the cigarette(s) have not been taped.)
3. Return all cigarettes to the plastic container after testing, seal and return the container to Customer Relations. **These cigarettes will be retained and used for additional testing if needed.**
4. Copy all raw data sheets and deliver to C. Callicutt.

Tobacco Weight Determination

1. After the samples have equilibrated in the ISO chamber for at least 48 hours, transfer cigarettes from the "Nic-Flr" equilibration tray to a labeled and sealed plastic container and deliver to the PT Lab.
2. Analyze fifty (50) cigarettes for each tobacco weight determination. (If additional cigarette(s) are needed, obtain from the "ventilation retain sample" (ensure ventilation determination has already been performed before using this sample.)
3. Place all loose filler back into the plastic container, add additional carton labels, seal and deliver to Customer Relations for delivery to AMA for TX-NIC-FLR and TX-COV-AG analysis.
4. Copy all raw data sheets and deliver to C. Callicutt.

PM3000502989

Source: https://www.industrydocuments.ucsf.edu/docs/zqbl0001

Nicotine-in-Smoke Sample Preparation

1. Prepare the smoking group sheets for the eight samples of a specific request (Requests TX98-1 through TX98-13) over 17 smoking runs for a total of thirty four smoking ports per sample. (Note: Request TX98-14 will have 3 samples and will be analyzed over 7 smoking runs.)
2. When preparing the smoking run, place three cigarettes per port using the half-taped cigarettes from the "Smoke" equilibration tray.
3. Use ISO equilibrated IM#16 on each run. No tape is applied to the monitor.

Nicotine-in-Smoke Testing

1. Perform all smoking on the Filtrona smoking machines (#58 and #59) under ISO conditions using the following smoking parameters:
    - 45 mL puff volume.
    - 30 second puff interval.
    - 2 second puff duration.
2. Smoke three half-taped cigarettes on each port and obtain TPM, and puff count data. Take two (2) clearing puffs at the end of the smoking run.
3. Place TPM pads in large (18 x 150 mm) test tubes.
4. Use twenty (20) mL of extraction solution for each TPM pad.
5. Deliver Filtrona run sheets, nicotine chromatograms, and copies of the GC nicotine & water preliminary and final reports to C. Callicutt.

pH Analysis -whole cigarette (TX-pH)

1. Use half-taped cigarettes from the "pH" equilibration tray for this test.
2. Use degassed 0.1 N KCl for all determinations.
3. Smoke one cigarette per determination using the developed apparatus.
4. No clearing puffs are taken.
5. Transfer the fifty (50) mL of aqueous solution from each impinger to a 150 mL beaker (no TPM pad).
6. Rinse the impinger orifice tube using the collected aqueous solution sample in Step 5.
7. Place the pH electrode into the aqueous solution at or before ten (10) minutes after the smoking process has terminated and gently stir. Record the "pH" fifteen (15) minutes after the smoking process has terminated.
8. Analyze two (2) replicates per sample.
9. Input results into CQS database.
10. Deliver Filtrona and pH raw data results to C. Callicutt.

Nicotine-in-Filler

1. Loose filler obtained from tobacco weight determination will be delivered to AMA once a week with the sample request.

PM3000502990

Source: https://www.industrydocuments.ucsf.edu/docs/zqbl0001

2. Filler samples will be accompanied by a chain of custody form. The form needs to be signed and dated by the person in PTL transporting the samples and the person in AMA receiving the samples. (Samples are not to be left without a signature).
3. Deliver the signed form to C. Callicutt.
4. Tobacco weights will be supplied by PTL to AMA for all samples.
5. AMA will analyze samples in duplicate for total alkaloids by continuous flow analysis and in duplicate for ov after grinding.
6. AMA will calculate nicotine in filler (total alkaloids) results in milligrams per cigarette and milligrams per gram on both an "as-is" and dry weight basis.
7. AMA will supply raw data (replicate data) for nic-in-filler (total alkaloids) and ov analyses to PTL customer relations within 4 working days of sample receipt.
8. AMA will supply a copy of the instrument data reports to C. Callicutt.

Data Reporting

- Enter data for all tests, with the exception of the pH, TX-NIC-FLR and TX-OV-AG tests, into the CQS system per routine procedure.
- pH data is manually entered into the CQS system by the person performing the test.
- Results obtained from AMA for the Nic-in-Filler and the OV after grinding test will be entered into the CQS system by Customer Relations.

Data Analysis

- The standard deviations utilized by the CQS system have been set very high to prevent application of the MAD outlier test on this data.
- The data for these samples must be transferred by an analyst to Excel utilizing Brio.
- Apply the Dixon Test to data sets where applicable.
- No more than two outliers may be thrown out by this outlier test.
- Print Dixon results and deliver to C. Callicutt
- Print all raw data from CQS database and deliver to C. Callicutt.

Note: Texas requests will not be finalized until authorized by L. Chambers.

PM3000502991

Source: https://www.industrydocuments.ucsf.edu/docs/zqbl0001